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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|------------------------|---------------------|------------------|
| 09/512,942 | 02/25/2000 | THEODORE H. FEDYNYSHYN | 101328-148 | 6865 |

21125 7590 12/26/2001

NUTTER MCCLENNEN & FISH LLP
ONE INTERNATIONAL PLACE
BOSTON, MA 02110

EXAMINER

CHU, JOHN S Y

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1752

8

DATE MAILED: 12/26/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-8

| | | | |
|------------------------------|-------------------------------|---|--|
| Office Action Summary | Application No. 09/512,942 | Applicant(s) FEDYNYSHYN, THEODORE H. | |
| | Examiner John S. Chu | Art Unit 1752 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 18-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>7</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to the amendment received November 27, 2001 and the IDS received December 6, 2001.

1. Newly submitted claim 18-21 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The new claims are drawn to a process for patterning or processing a semiconductor substrate using the composition as recited in claim 1. These new claims are distinct from the claimed composition such that the claimed composition can be used in a materially different process such as a process for forming parts or structures by cast molding, thus providing a burden to the examiner to additionally consider the method claims.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 18-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

2. The rejection under 35 U.S.C. 102(b) as being anticipated by USHIROGOUCHI ET AL is **withdrawn** in view of the amendment to claim 1 reciting the particle size of the core particles. USHIROGOUCHI ET AL lacks the claimed particles size having an average size less than 10 nm.

3. The rejection under 35 U.S.C. 102(b) as being anticipated by MAINTHIA is **withdrawn** in view of the amendment to claim 1 reciting the particle size of the core particles. MAINTHIA lacks the claimed particles size having an average size less than 10 nm.

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4. The rejection under 35 U.S.C. 102(e) as being anticipated by DENZINGER ET AL. is **withdrawn** in view of the amendment to claim 1 reciting the particle size of the core particles. DENZINGER ET AL lacks the claimed particles size having an average size less than 10 nm.

5. The rejection under 35 U.S.C. 102(e) as being anticipated by ELSAESSER ET AL is **withdrawn** in view of the amendment to claim 1 reciting the particle size of the core particles. ELSAESSER ET AL lacks the claimed particles size having an average size less than 10 nm.

6. The rejection under 35 U.S.C. 103(a) as being unpatentable over OTA ET AL. is **withdrawn** in view of the amendment to claim 1 reciting the particle size of the core particles. OTA ET AL lacks the claimed particles size having an average size less than 10 nm.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-17 rejected under 35 U.S.C. 103(a) as being unpatentable over KAWAMURA ET AL.

The claimed invention is drawn to a positive photosensitive resist composition comprising a resin binder and an encapsulated inorganic material.

KAWAMURA ET AL discloses a photosensitive composition comprising a resin binder and inorganic particles as seen in column 25, lines 24 – 55 wherein the particles are present in an amount of 2 to 90% by volume.

KAWAMURA ET AL lacks the specific use of alumina or titanium dioxide in an explicit example.

It would have been *prima facie* obvious to one of ordinary skill in the art of photosensitive compositions to use either of alumina or titanium dioxide and reasonably expect same or similar results as those compositions which have improved sensitivity and discrimination.

Motivation is based on the desire to provide good sensitivity and contrast.

The arguments have been carefully considered, however applicants are further directed to column 30, lines 44-52 wherein the size of surface-modified particles fall in the range of 1 nm to 2000 nm. This disclosed range motivates the skilled artisan to use particles having those sizes disclosed wherein the end points serve as actual data points suitable for use. Thus KAWAMURA ET AL provides clear motivation for the skilled artisan to use particles having sizes recited in claim 1 being less than 10 nm. Further the composition of KAWAMURA ET AL is also base soluble even if it not explicitly disclosed because compositions developed by water, which are basic to the acid -produced compositions upon exposure, would also be developable in a stronger basic compound therefore inherently meeting the claimed invention.

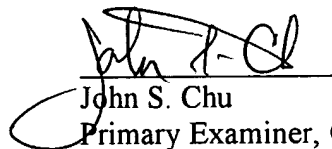
9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on M-F from 9:30 am to 6:00 pm.

The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


John S. Chu
Primary Examiner, Group 1700

J.Chu
December 20, 2001